

Message Text

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FM SECSTATE WASHDC

TO AMEMBASSY LONDON PRIORITY

INFO AMCONSUL HAMILTON PRIORITY

AMEMBASSY NASSAU PRIORITY

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E.O. 11652:N/A

TAGS:TSPA:

SUBJECT:NASA LASER RANGING STATIONS AT GRAND TURK AND
BERMUDA

REF: (A) STATE 62913

(B) LONDON 4526

(C) STATE 1207

(D) LONDON 2388

1. SUMMARY: NASA PERSONNEL SPOKE WITH VARNEY MARCH 25.
CRUX OF PROBLEM IS U.K. INTERNAL STANDARDS FOR OPERATION

OF UK LASERS.

2. GODDARD STAFF TALKED WITH VARNEY MARCH 25. TO
FAMILIARIZE HIM WITH NASA PLAN GODDARD RECAPPED INFO
SUPPLIED REFS A AND C ADDING DETAILS (SEE PARA 3 BELOW).
VARNEY SEEMED UNDERSTAND NASA'S PROBLEM AND ACKNOWLEDGED
HE DID NOT EXPECT NASA ENACT ALL MEASURES SUGGESTED REF D

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PRIOR TO LAUNCH. U.K. REQUESTED MATCH THOSE REQUIRED BY

U.K. AUTHORITIES FOR OPERATION OF U.K. UNIVERSITY LASERS.
IN FACT, UNIVERSITY DID NOT PROCEED WITH PROGRAM ON
ACCOUNT OF THESE SAME OBJECTIONS RAISED BY CAV. VARNEY

NOT OPTIMISTIC U.K. PRECEDENT CAN BE LAID ASIDE FOR
NASA OPERATIONS.

3. FOLLOWING IS SYNOPSIS OF ADDITIONAL INFORMATION
PROVIDED VARNEY BY PHONE:

A. NASA EXISTING SURVEILLANCE RADAR, AN/MPQ-29, CAN
DETECT ONE-SQUARE METER TARGET AT RANGES UP TO 9.0 NM;
HOWEVER PROBABILITY OF DETECTION IS LESS THAN 99.5 PER
CENT. RADARS IN USE THROUGHOUT U.S. BY FAA SELDOM EXHIBIT
PROBABILITY OF DETECTION ON ONE-SQUARE METER TARGET OF
GREATER THAN 80 PER CENT AT MAXIMUM RANGE.

B. COMPLETE LINK ANALYSIS PERFORMED BY NASA TO DETERMINE
DISTANCE AT WHICH MAXIMUM PERMISSIBLE EXPOSURE FOR INTRA-
BEAM VIEWING OF LASERS WOULD BE REACHED. CALCULATIONS
BASED ON RECOMMENDED LIMITS FOR OCULAR EXPOSURE TO LASER
RADIATION CONTAINED IN DOCUMENTS OF AMERICAN CONFERENCE
OF GOVERNMENTAL INDUSTRIAL HYGIENISTS AND AMERICAN NA-
TIONAL STANDARDS INSTITUTE. ANALYSIS SHOWED THAT MAXIMUM
PERMISSIBLE EXPOSURE FOR THESE LASERS OCCURS AT RANGE OF
16.65 NM DURING DARKNESS AND 7.45 NM DURING DAYLIGHT
CONDITIONS. FOR NIGHT TIME OPERATION OF LASERS, A
NEUTRAL DENSITY FILTER IS INSERTED IN TRANSMIT OPTICS TO
REDUCE BY FACTOR OF 5 TRANSMITTAL SIGNAL LEVEL. THIS
IN TURN REDUCES RANGE FOR MAXIMUM PERMISSIBLE EXPOSURE TO
6.8 NM AND WITHIN RANGE OF NASA SURVEILLANCE RADAR.

C. PRESENT SYSTEM INCLUDES RADAR MOUNT TELESCOPIC OBSER-
VATIONS, RADAR SCOPE OBSERVATIONS AND BINOCULAR OBSERVA-
TIONS.

D. SYSTEM NOT OPERATED BELOW 20 DEGREES ELEVATION OF
LASER.

E. MANUAL SHUT DOWN OF SYSTEM IN EVENT TARGET IN VIEW,
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FAILURE OF RADAR, CLOUD COVER OR LOW ELEVATION.

4. WOULD APPRECIATE POST PASSING TECHNICAL SUBSTANCE OF
PREVIOUS REFTELS PLUS PARA 3, ALL IN ONE DOCUMENT TO
VARNEY FOR HIS REFERENCE. INGERSOLL

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Message Attributes

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